

REMARKS

I. Introduction

As there is no explanation provided in the January 26, 2006 Office Action to indicate that claim 3 has been rejected over the cited prior art, and that the Examiner has indicated that the rejection of claims 1-4 set forth in the August 11, 2005 Office Action was withdrawn, Applicants respectfully submit that claim 3 is allowable over the cited prior art, the indication of which is respectfully solicited.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1, 2 And 4 Under 35 U.S.C. § 103

Claims 1, 2 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe et al. (JP 2002-319398). In addition, claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe in view of Kaneda et al. (USP No. 6,638,662). Applicants respectfully traverse these rejections over the pending claims for at least the following reasons.

With regard to the present invention, claim 1 recites, in-part, a non-aqueous electrolyte rechargeable battery comprising a positive electrode capable of charging and discharging lithium, wherein said positive electrode contains a mixture of a first positive electrode active material and a second positive electrode active material, wherein said second positive electrode active material comprises $\text{Li}_x\text{Co}_{1-y-z}\text{Mg}_y\text{Al}_z\text{O}_2$ where $1 \leq x \leq 1.03$, $0.005 \leq y \leq 0.1$ and $0.001 \leq z < 0.02$.

Watanabe discloses a mixture of a first positive electrode active material comprising $\text{Li}_x\text{Co}_y\text{M}_w\text{O}_z$, in which M is at least one of Al, Cu, Zn, Mg, Ca, Ba and Sr, and wherein $0.02 \leq w \leq 0.15$. Also disclosed is a second positive electrode active material comprising $\text{Li}_a\text{Ni}_b\text{M}'_c\text{O}_d$, in which M' is at least one of Co, Mn, Cr, Fe, V, or Al, and $0.02 \leq c \leq 0.5$. As is evident, the second positive electrode active material of the present invention which comprises $\text{Li}_x\text{Co}_{1-y-z}\text{Mg}_y\text{Al}_z\text{O}_2$ where, $0.001 \leq z < 0.02$, falls outside the scope of both the first and the second positive electrode materials disclosed in Watanabe, because the molar amount of Al, is *less than 0.02, not equal to or greater than 0.02*, as is disclosed in Watanabe.

Furthermore, the present invention shows unexpected and significant results from the use of Al in such a range. As is indicated in Tables 1 and 2 found on pages 23-24 of the specification of the present invention, Examples 1-4 contain Al with a molar ratio of 0.01. Comparative Examples 1, 3, 6, 12 and 13 each contain Al with a molar ratio outside the range cited in the present invention. As is shown in Table 2, the Examples 1-4 show marked improvement in capacity maintenance ratio and capacity recovery ratio over the comparative examples cited above.

The Interview Summary, received on April 18, 2006, indicates that unexpected results must be shown for a molar amount of Al less than 0.02 as compared to a molar amount of Al equal to 0.02. Applicants respectfully submit that there is no requirement in either United States Code Title 35, the Code of Federal Regulations Chapter 37, or the MPEP for a requirement that the amount at the extreme end of a range *must* be shown to indicate unobviousness over the prior art. Furthermore, Applicants submit that while results for a molar amount of *exactly* 0.02 Al were not shown, results for a molar amount of 0.025 were shown in Comparative Examples 12 and 13. Applicants assert that the requirement for showing results for a molar amount of exactly

0.02 is burdensome, unfair and unnecessary in view of the stated requirements in the MPEP.

Applicants direct the Examiner to MPEP § 716.02(d) entitled “Unexpected Results

Commensurate in Scope With Claimed Invention” which states:

Whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the “objective evidence of non-obviousness must be *commensurate in scope* with the claims which the evidence is offered to support. *In re Clemens*, 622 F.2d 1029, 206 USPQ 289 (CCPA 1980).

The section further states:

To establish unexpected results over a claimed range, applicants should compare *a sufficient number of tests* both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960).

This is the standard under which the unobviousness must be shown. Applicants assert that the examples shown in Tables 1 and 2 are indeed commensurate in scope with the claims which the evidence is offered to support. The range of a molar ratio of 0.001 to less than 0.02 is a small range, *significantly* smaller than the range cited in the prior art (less than or equal to 0.02 to less than or equal to 0.15). Furthermore, the Examples cited in Watanabe contain molar ratios of Al of 0.1 and 0.15 (see Table 2, page 13 of machine copy of Watanabe translation). As such, the difference in molar amounts indicated in the examples of Watanabe are *several times larger* than the amount of the *entire range* for Al cited in claim 1 of the present invention. Moreover, the present invention cites 4 examples indicating the unexpected and significant results obtained for a battery with an amount of Al within the range cited in claim 1. As such, the present

invention **does** provide objective evidence of non-obviousness that is *commensurate in scope* with the claims which the evidence is offered to support and compares *a sufficient number of tests* both inside and outside the claimed range. To require anything more is unfair, unreasonable and unsupported by the patent law.

As the ranges of the elements disclosed in claim 1 are outside the scope of the prior art, AND the invention discloses unexpected and superior results over the cited prior art, AND the claims cited in present invention are supported in the specification and have not been amended in response to any previous office action, Applicants respectfully assert that the § 103 rejection of claim 1 is improper. Therefore, as Watanabe fails to render claim 1 of the present invention obvious, the rejection under § 103(a) should be withdrawn. Accordingly, claim 1 and all pending dependent claims thereon should be considered allowable.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

IV. Conclusion

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

Application No.: 10/730,049

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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